00-544

ENVIRON

135807000C1
Eagle Zinc Co.
SF/Tech

February 8, 2000

Mr. Clarence Smith
Bureau of Land
Illinois Environmental Protection Agency
1021 North Grand Avenue, East
P.O. Box 19276
Springfield, Illinois 62794

Re: Eagle Zinc - Hillsboro, Illinois

Dear Mr. Smith:

On behalf of Eagle Zinc, ENVIRON has prepared and attached a scope of work outline for your consideration. We have also included smaller printed versions of the meeting presentation materials, as modified based upon our meeting discussions, for your use and have referenced these figures in the outline. We have included six copies of the material for your use and distribution.

Based upon our previous experience and Agency discussions, we have presumed that any community relations requirements will be coordinated by the IEPA with input from Eagle Zinc, its attorneys, and its consultants.

Also enclosed is information discussing test results on the residual materials proposed for on-site and off-site use as surface aggregate (i.e. road bed) or shallow fill which has been submitted to Joyce Munie of the IEPA for review.

Please call us so that we can schedule a discussion of the enclosed materials, after which we will begin preparation of the Sampling and Analysis Plans and provide a proposed schedule for implementation to the Agency.

Sincerely,

ENVIRON International Corporation

Mary Jo Anzia

Mary Jo Anzia, P.E.
Senior Manager

MJA:als
P:\Client Project Files\Hillsboro Eagle Zinc\Smith_020800ltr.doc

cc: Mr. Tom Youngless - Eagle Zinc
Mr. Jeffrey Fort - Sonnenschein, Nath & Rosenthal
Ms. Lois Kimbol - Dechert, Price & Rhoads
Mr. Joseph Freudenberg - Dechert, Price & Rhoads
Ms. Patricia Diamond - T.L. Diamond Company, Inc.

650 Dundee Road • Suite 150 • Northbrook, Illinois 60062 • USA • Tel: (847) 753-9900 • Fax: (847) 753-9420 • www.environcorp.com

SCOPE OF WORK
Non-Time-Critical Removal Response Action
Eagle Zinc
Hillsboro, Illinois

I. Sampling and Analysis Plans [40CFR300.415(b)(4)(ii)(A)-(B)]

A. Field Sampling Plan preparation

The FSP will be prepared in accordance with RI/FS guidance[1] and will include the following information:

Site background
Sampling objectives
Sample location and frequency
Sample designation
Sampling equipment and procedures
Sample handling and analysis

B. Quality Assurance Project Plan preparation

The QAPP will be prepared in accordance with EPA guidance[2] and will include the following information:

Project management
Measurement/data acquisition
Assessment/oversight
Data validation and usability

C. Agency review of draft FSP and QAPP

D. Finalize FSP and QAPP

E. Agency approval of FSP and QAPP

---

[1] USEPA Office of Emergency and Remedial Response, "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA - Interim Final," EPA/540/G-89/004, October 1988.

[2] USEPA Office of Research and Development, "EPA Guidance for Quality Assurance Project Plans - EPA QA/G-5," EPA/600/R-98/018, February 1998 and USEPA Office of Emergency Remedial Response, "Quality Assurance/Quality Control Guidance for Removal Activities - Sampling QA/QC and Data Validation Procedures," EPA/540/G-90/004, April 1990.

II. Health and Safety Plan

A. Site-specific Health and Safety Plan preparation

The HSP will be prepared in accordance with 29 CFR 1910.120 and EPA guidance[3] and will include the following information:

Preparation and approval
Site description
Hazard evaluation
Monitoring requirements
Levels of protection
Work limitation
Authorized personnel
Decontamination
Emergency information

B. Agency review of draft HSP

C. Finalize HSP

III. Sampling and Analysis [40CFR300.415(b)(4)(ii)]

A. General Tasks

1. **Obtain off-site access[4]**
   Off-site access for stream/ditch observations and sampling.
2. **Visual inspections of Areas A-D (see Figure 8)**
   Visual inspection for locations of residue and undisturbed soil areas.
3. **Ecological survey (see Figure 9)**
   Visual inspection for sensitive habitats, water fowl, hydric soils, and invertebrate populations.

B. Soil Investigation

1. **Soil sample collection – Areas A-D**
   Install approximately 25 borings in Areas A and D, 25 borings in Area B, and 25 borings in Area C. Collect 3-foot vertical samples at each boring location and analyze for metals using the XRF.
   Collect approximately 4 soil samples within each area; analyze for metals using XRF and/or laboratory analysis.

---

[3] USEPA Office of Research and Development, "Guidance on Remedial Investigations Under CERCLA," EPA/540/G-85/002, June 1985.

[4] Eagle Zinc, its attorneys, and its consultants will attempt to obtain access permission for all off-site inspection and sampling locations. If initial attempts are unsuccessful, Eagle Zinc may seek IEPA assistance.

2. **Air emissions modeling**
   Modeling, using the EPA Industrial Source Complex 3 - Long-term (ISCLT3) model, to determine the primary deposition locations for any stack emissions from the facility.
   Conduct a waste pile fugitive emissions risk assessment EPA guidance[5]. If the risk is significant, a fugitive emission model will be used to determine the deposition locations.
3. **Air stack deposition sampling**
   If required, based upon modeling results, using XRF analysis.
4. **Waste pile fugitive dust deposition sampling**
   If required, based upon modeling results, using XRF analysis.
5. **Sediment sample collection (see Figure 8)**
   Collect 4 sediment samples from ditch to south of site; collect 6-8 additional sediment samples each from Outfalls 001 and 002 discharge ditches. Analyze samples for metals using XRF.

C. **Ground Water Investigation**
1. **Water level measurements - Round 1 (see Figure 7)**
   Collect round of water level measurements from each existing on-site well to ensure the correct placement of temporary piezometers.
2. **Temporary piezometer installation and survey (see Figure 8)**
   Install 4 temporary piezometers to further define on-site ground water flow patterns.
3. **Water level measurements - Round 2**
   Collect round of water level measurements from each existing on-site well and temporary piezometer.
4. **Ground water sample collection**
   Collect ground water samples from each existing on-site monitoring well. Analyze samples for total and dissolved metals.

[5] USEPA Office of Air Quality Planning and Standards, "Hazardous Waste TSDF (Treatment, Storage, and Disposal Facilities); Fugitive Particulate Matter Air Emissions Guidance Document," EPA/450/3-89/019, May 1989.

IV. Sampling and Analysis Report[6]

A. Sampling and Analysis Report preparation

The Sampling and Analysis Report will be prepared in accordance with EPA guidance[7] and will include the following information:

Purpose of report
Site description
Previous investigations
Descriptions of removal response action investigative activities
Data collection methods
Results of sampling (both summarized and complete)
Data validation results

V. EE/CA Preparation [40CFR300.415(b)(4)(i)]

A. EE/CA preparation

The EE/CA will be conducted in accordance with EPA guidance[8] and will include analysis and reporting of the following information:

- *Site Characterization*
  - *Site description and background*
  - *Previous removal actions*
  - *Source, nature, and extent of contamination*
  - *Analytical data*
  - *Streamlined risk evaluation*
- *Identification of Removal Action Objectives*
  - *Determination of removal scope*
  - *Determination of removal schedule*
- *Identification and Analysis of Removal Action Alternatives*
  - *Effectiveness*
  - *Implementability*
  - *Cost*
- *Comparison Analysis of Removal Action Alternatives*
- *Recommended Removal Action Alternative*

---

[6] Such a report is not specifically required under 40CFR300.415. However, the preparation of a Sampling and Analysis report has been proposed to allow the Agency opportunity for comment on the investigation activities and data, prior to commencement of the EE/CA.

[7] USEPA Office of Emergency and Remedial Response, "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA - Interim Final," EPA/540/G-89/004, October 1988.

[8] USEPA Office of Solid Waste and Emergency Response, "Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA," EPA540-R-93-057, August 1993.

B. **Agency review of draft EE/CA**

C. **Finalize EE/CA**

D. **Agency approval of EE/CA**

VI. Removal Action [40CFR300.415]

A. Potential actions[9]

The potential removal actions may include the following activities:

Temporary piezometer abandonment
Building demolition
Cover installation (see Figure 5)
Manufacturing area paving (see Figure 5)
Erosion control
Surface drainage way construction (see Figure 5)
Fence installation (see Figure 5)
Continue beneficial reuse of pile material

[9] A preliminary list of potential removal actions has been presented and is based upon a review of existing available information. Upon collection and analyses of additional data to fill data gaps and completion of the EE/CA, the list of potential removal actions may be modified.

ENVIRON

February 4, 2000

Ms. Joyce Munie
Manager Permit Section
Illinois Environmental Protection Agency
1024 N. Grand Avenue East
Springfield, Illinois 62702

Re: Beneficial Reuse of Slag from the Eagle Zinc Company, Hillsboro, Illinois

Dear Ms. Munie:

The Eagle Zinc Company requests IEPA's determination regarding the classification of slag from a zinc oxide furnace as a beneficially usable material. The company plans to market this residual material as surface aggregate or shallow fill for which there is substantial local demand and to use the material for the same purpose on-site. On behalf of Eagle Zinc, we are requesting a response letter stating that such uses are acceptable to the IEPA and that the material status is beneficially usable or clean fill. This request is based upon results of laboratory testing as summarized below. Slag samples from the two Eagle Zinc processes (rotary residue process slag and Waelz kiln coarse slag) were tested and both types of slag are proposed for reuse. The laboratory test results are attached.

The physical characteristics of the two slag types were determined by Sodium Soundness, LA Abrasion, Grain Size and Hydration Reaction testing. The results are presented in Tables 1 and 2. The slag meets the physical requirements of Illinois Department of Transportation (IDOT) coarse aggregate. While the size gradation of the coarse slag did not meet typical IDOT road specifications, it would be well suited for the planned use as private use surface aggregate or shallow fill.

The hazardous/toxicity characteristics of the slag were determined in accordance with Title 35 of the Illinois Administrative Code (IAC) Part 721 Identification and Listing of Hazardous Waste. The analysis results from two slag samples are attached in Tables 3 and 4. Based upon these results, the slag materials are not hazardous waste by characteristic.

Although it is the company's position that these materials are not "wastes", as part of this application, the usability of the slag was determined in accordance with Title 35 IAC Part 817, Requirements for New Steel and Foundry Industry Wastes/Landfills. The results of testing to determine the leaching potential of the two types of slag according to the methods specified in Part 817 are attached in Table 5, along with the Beneficially Useable Waste standards. Based upon these results, the slag should be classified as beneficially useable.

The Water Pollution Control section of the IEPA has stated that slag materials used as fill or bedding material are not regulated and are considered inert fill. Therefore, we understand that the Water Pollution Control section would consider the Eagle Zinc slag usable for the intended application as surface aggregate or shallow fill without further testing.

Pursuant to Title 35 IAC Part 817 Section 104, the process slag will be tested annually or if one of the following occurs which may change the leaching characteristics of the slag: 1) there is a change of raw materials; 2) there is a modification in the process; 3) there is an addition of a new process. The results can be submitted for approval, if requested, to maintain the beneficially useable material classification.

Please review the attached laboratory results and provide a letter of approval of both types of the Eagle Zinc slag for reuse. Since the season for use of these materials is fast approaching, we thank you for your prompt attention to this matter.

Respectfully,

ENVIRON International Corporation

Cynthia Bonczkiewicz

Cynthia Bonczkiewicz, P.E.
Associate

Ron Hutchens

Ronald E. Hutchens, P.E.
Principal

Hillsboro-Eagle Zinc/Word/muncie_020400/217400A

cc: Mr. T. A. Youngless -Eagle Zinc Company
Mr. Joseph Freudenberg, Esq. - Dechert Price & Rhoads
Mr. Clarence Smith -IEPA Bureau of Land
Mr. Jorge Patino -IEPA Water Pollution Control Section
Ms. Lois Kimbol, Esq.- Dechert Price & Rhoads
Ms. Patricia Diamond,Esq.,-T.L. Diamond Company, Inc.
Ms. Mary Jo Anzia, Environ International Corporation

Table 1 – Summary of Slag Results

IDOT Specifications	Tests Results Waelz kiln Slag Coarse Room Material (WKR)
Min Unit Weight for Slag (AASHTO-T19):	**Unit Weight (ASTM C-29):**
70lb/ft3	104 lb/ft3
Max % loss Na2S04 Soundness (AASHTO-T104)*:	**% loss Na2S04 Soundness (ASTM C-88):**
IDOT Class B: 15; IDOT Class C: 20	5.4
Max % loss LA Abrasion (AASHTO-T96):	**% loss LA Abrasion Test (AASHTO-T96):**
IDOT Class B: N/A for crushed slag; IDOT Class C: 40	47.0

Size Gradation (Max % Passing Sieve Size):** / **Size Gradation (% Passing Sieve Size):**

Sieve Size	IDOT CA-6	IDOT CA-9	IDOT CA-13	WKR
1 ½ "	100	100	--	100
1"	95+5	97+3	100	85
½"	75+15	60+15	97±3	40
#4	43+13	30+15	30±15	9
#16	25+15	10+10	6±6	7
#200	8+4	6+6	--	3

Note: CA10; CA15, 17, 18 have greater than 45% passing #4 sieve

Hydration Reaction: No IDOT Specification	**Hydration Reaction (ASTM D4792):** 0.3% expansion

* Class A, B, or C is required for many IDOT coarse aggregate uses.
** Size gradation requirements depend on the aggregate use.

- IDOT aggregate surface coarse (without compaction requirement, Type B) may use Gradation CA6, CA9, or CA10;
- IDOT aggregate surface course (with compaction requirements, Type A) CA6, or CA10, CA9 may be used if approved.
- IDOT granular base, subbase & shoulder, use CA-6
- IDOT coarse aggregate for bituminous mixtures Class A, 1, Type 1 & 2 mixture C & D can be crushed slag gradation CA13 or CA16.
- IDOT coarse aggregate for embankment, backfill & French drains can be crushed slag graduation CA15, CA17, or CA18

Table 2 – Summary of Slag Results

IDOT Specifications	Tests Results Rotary Residue Process Slag
Min Unit Weight for Slag (AASHTO-T19): 70lb/ft3	**Unit Weight (ASTM C-29):** 122 lb/ft3
Max % loss Na2S04 Soundness (AASHTO-T104)*: IDOT Class B: 15; IDOT Class C: 20	**% loss Na2S04 Soundness (ASTM C-88):** 1.4
Max % loss LA Abrasion (AASHTO-T96): IDOT Class B: N/A for crushed slag; IDOT Class C: 40	**% loss LA Abrasion Test (AASHTO-T96):** 46.7

Size Gradation (Max % Passing Sieve Size):** / **Size Gradation (% Passing Sieve Size):**

Sieve Size	IDOT CA-6	IDOT CA-9	IDOT CA-13	Test Result
1 ½"	100	100	--	100
1"	95+5	97+3	100	97
½"	75+15	60+15	97±3	69
#4	43+13	30+15	30±15	24
#16	25+15	10+10	6±6	15
#200	8+4	6+6	--	5

Note: CA10; CA15, 17, 18 have greater than 45% passing #4 sieve

Hydration Reaction: No IDOT Specification	**Hydration Reaction (ASTM D4792):** 1.7% expansion

* Class A, B, or C is required for many IDOT coarse aggregate uses.
** Size gradation requirements depend on the aggregate use.

- IDOT aggregate surface coarse (without compaction requirement, Type B) may use Gradation CA6, CA9, or CA10;
- IDOT aggregate surface course (with compaction requirements, Type A) CA6, or CA10; CA9 may be used if approved.
- IDOT granular base, subbase & shoulder; use CA-6
- IDOT coarse aggregate for bituminous mixtures Class A, 1, Type 1 & 2 mixture C & D can be crushed slag gradation CA13 or CA16.
- IDOT coarse aggregate for embankment, backfill & French drains can be crushed slag graduation CA15, CA17, or CA18.

TABLE 3

HAZARDOUS CHARACTERIZATION ANALYTICAL RESULTS
CORROSIVITY, IGNITABILITY AND REACTIVITY
EAGLE ZINC COMPANY
HILLSBORO, ILLINOIS

Analyte	Rotary Residue Process Slag	Waelz Kiln Residue WKR
pH (units)	8.3	11.5
Flash Point (degrees Fahrenheit)	>140	>140
Reactive Cyanide (mg/L)	<137	<139
Reactive Sulfide (mg/L)	<137	<139

TABLE 4

HAZARDOUS CHARACTERIZATION ANALYTICAL RESULTS
TOXICITY CHARACTERISTIC
EAGLE ZINC COMPANY
HILLSBORO, ILLINOIS

Analyte	Maximum Allowable Toxicity Characteristic Concentrations (mg/L)	Rotary Residue Process Slag (mg/L)	Waelz Kiln Residue WKR (mg/L)
Toxicity Characteristic			
Volatile Organic Compounds			
Vinyl chloride	0.2	0.010 U	0.010 U
1,1-Dichloroethene	0.7	0.010 U	0.010 U
Chloroform	6.0	0.010 U	0.010 U
1,2-Dichloroethane	0.5	0.010 U	0.010 U
Carbon tetrachloride	0.5	0.010 U	0.010 U
Trichloroethene	0.5	0.010 U	0.002 J
Benzene	0.5	0.010 U	0.010 U
Tetrachloroethene	0.7	0.010 U	0.004 J
Chlorobenzene	100.0	0.010 U	0.010 U
2-Butanone	200.0	0.010 U	0.010 U
Semivolatile Organic Compounds			
Pyridine	5.0	0.050 U	0.050 U
1,4-Dichlorobenzene	7.5	0.050 U	0.050 U
2-Methylphenol	200.0	0.050 U	0.050 U
3-Methylphenol	200.0	0.050 U	0.050 U
4-Methylphenol	200.0	0.050 U	0.050 U
Hexachloroethane	3.0	0.050 U	0.050 U
Nitrobenzene	2.0	0.050 U	0.050 U
Hexachlorobutadiene	0.5	0.050 U	0.050 U
2,4,6-Trichlorophenol	2.0	0.050 U	0.050 U
2,4,5-Trichlorophenol	400.0	0.050 U	0.050 U
2,4-Dinitrotoluene	0.13	0.050 U	0.050 U
Hexachlorobenzene	0.13	0.050 U	0.050 U
Pentachlorophenol	100.0	0.100 U	0.100 U
Metals			
Arsenic	5.0	0.0076 U	0.0076 U
Barium	100.0	0.868 B	0.922 B
Cadmium	1.0	0.102 B	0.0601 B
Chromium	5.0	0.0015 U	0.0015 U
Lead	5.0	0.176 B	0.0487 B
Mercury	0.2	0.00010 U	0.00010 U
Selenium	1.0	0.0142 B	0.0135 B
Silver	5.0	0.00090 U	0.00090 U

Key:

U = The element was analyzed for but not detected at or above the associated value.
J= The associated value is an estimated quantity.
B = The analyte was detected below the laboratory CRDL but above the IDL.
CRDL = Contract-required detection limit
IDL = Instrument detection Limit.

TABLE 5

WASTE CLASSIFICATION ANALYTICAL RESULTS
EAGLE ZINC COMPANY
HILLSBORO, ILLINOIS

Analyte	Maximum Allowable Leaching Concentrations Beneficially Usable Wastes (mg/L)	Rotary Residue Process Slag (mg/L)	Waelz Kiln Residue WKR (mg/L)
ASTM Leach Method D3987			
Volatile Organic Compounds			
Vinyl chloride	0.002	0.0005 U	0.0005 U
1,1-Dichloroethene	0.007	0.0005 U	0.0005 U
1,2-Dichloroethane	0.005	0.0005 U	0.0005 U
1,1,1-Trichloroethane	0.2	0.0005 U	0.0005 U
Carbon tetrachloride	0.005	0.0005 U	0.0005 U
Trichloroethene	0.005	0.0005 U	0.0002 J
Benzene	0.005	0.0005 U	0.0005 U
Tetrachloroethene	0.005	0.0005 U	0.0005 U
Toluene	1	0.0005 U	0.0005 U
Chlorobenzene	0.1	0.0005 U	0.0005 U
Ethylbenzene	0.7	0.0005 U	0.0005 U
Styrene	0.1	0.0005 U	0.0005 U
1,2-Dichloropropane	0.005	0.0005 U	0.0005 U
trans-1,2-Dichloroethene	0.1	0.0005 U	0.0005 U
cis-1,2-Dichloroethene	0.07	0.0005 U	0.0005 U
Xylene (total)	10	0.0005 U	0.0005 U
Trihalomethanes (total)	0.1		
Bromoform	---	0.0005 U	0.0005 U
Bromodichloromethane	---	0.0005 U	0.0005 U
Chloroform	---	0.0005 U	0.0005 U
Dibromochloromethane	---	0.0005 U	0.0005 U
Metals			
Arsenic	0.05	0.0076 U	0.0076 U
Barium	2.0	0.0887 B	0.121 B
Cadmium	0.005	0.00030 U	0.00030 U
Chromium	0.1	0.0015 U	0.0015 U
Copper	5	0.0021 B	0.0050 B
Iron	5	0.0227 U	0.0270 U
Lead	0.0075	0.0015 U	0.0015 U
Manganese	0.15	0.0018 B	0.0040 B
Selenium	0.05	0.0034 U	0.0034 U
Zinc	5	0.0077 B	0.467
Wet Chemistry			
Chloride	250	< 3.0	< 3.0
Fluoride	4	0.3	0.1
Nitrate	10	0.35	0.22
Sulfate	400	27.5	34.3
Total Dissolved Solids	1,200	90	300

Key:

U = The element was analyzed for but not detected at or above the associated value.
B = The analyte was detected below the laboratory CRDL but above the IDL.
CRDL = Contract-required detection limit.
IDL = Instrument detection Limit.

Figure 1

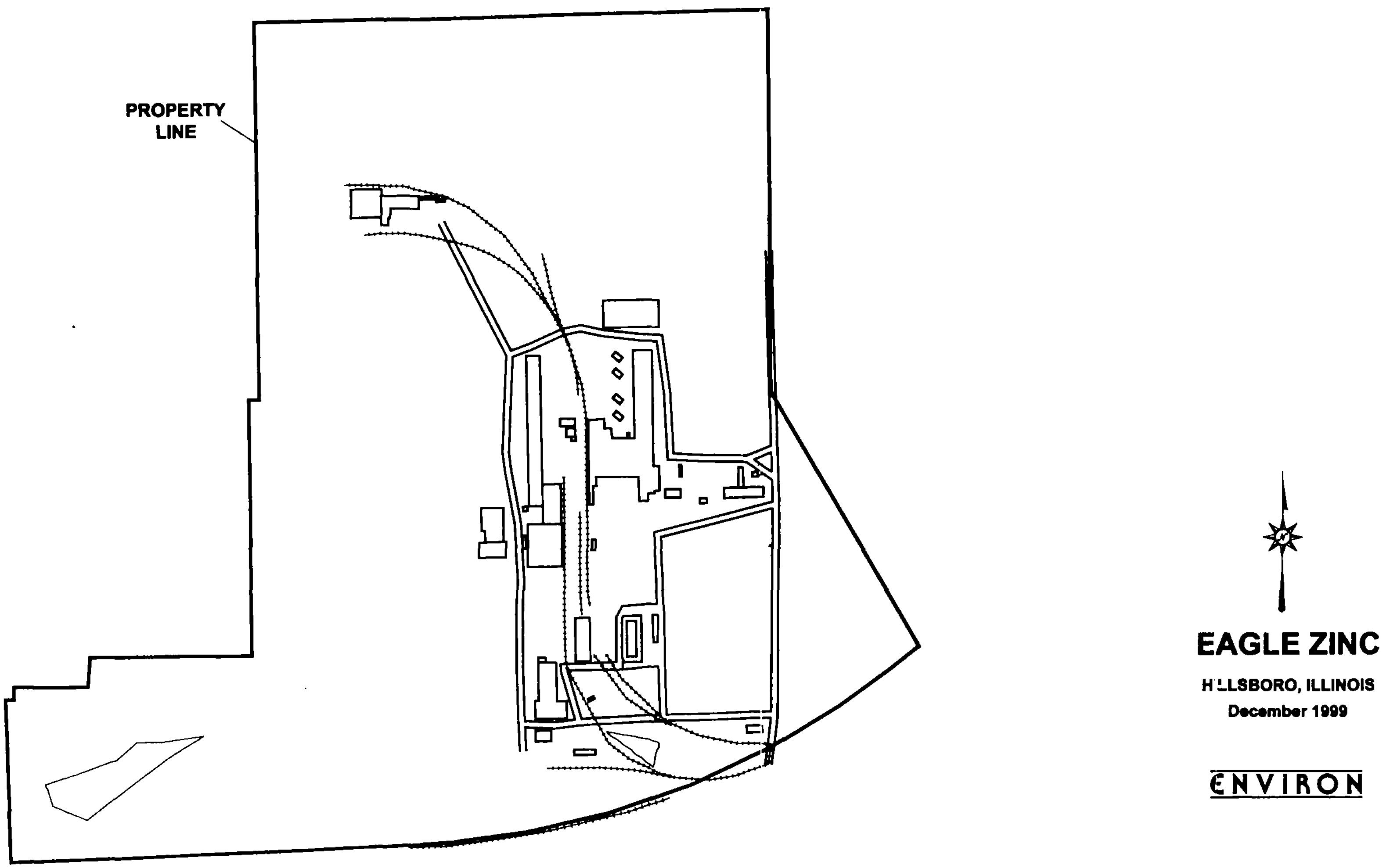
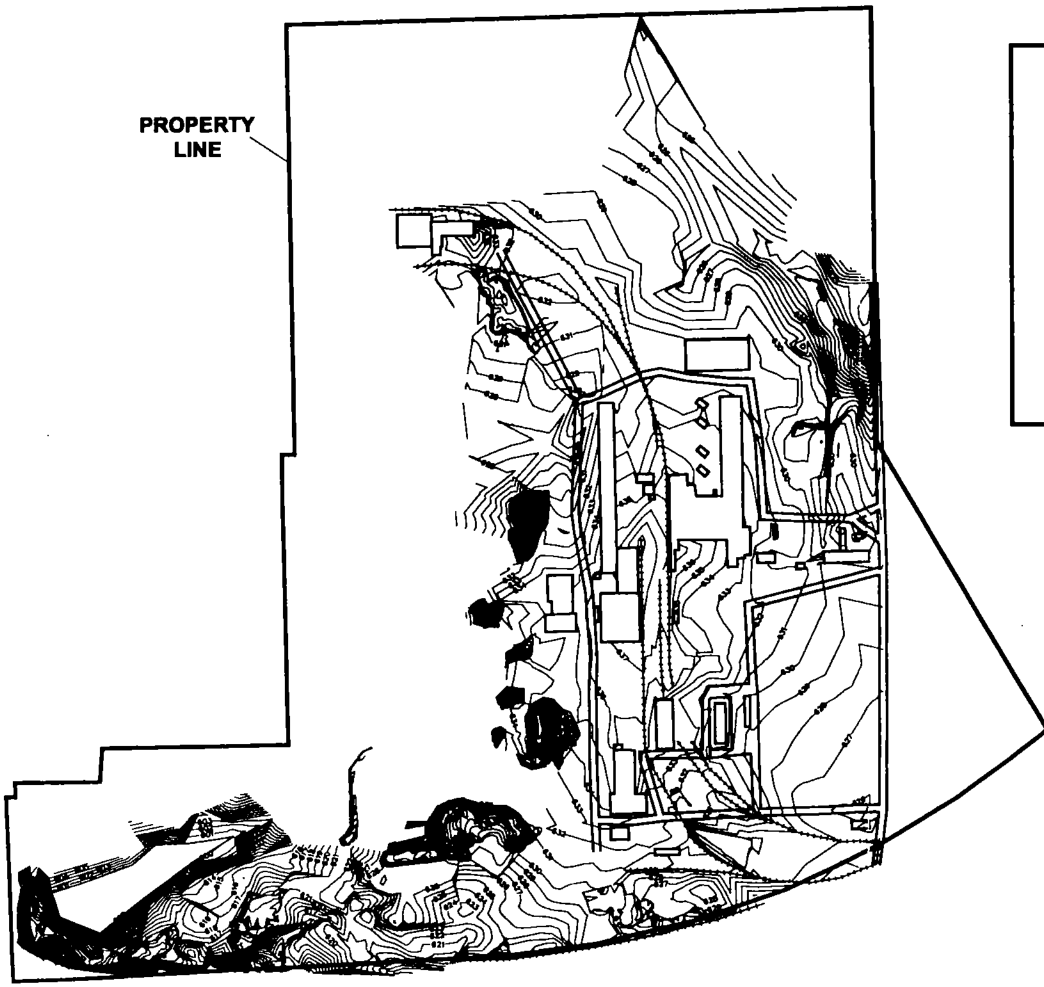

PROPERTY
LINE
EAGLE ZINC
HILLSBORO, ILLINOIS
December 1999
ENVIRON

Figure 2



Contours	1998 - Site Survey (by Hurst - Rosche Engineers Inc.)

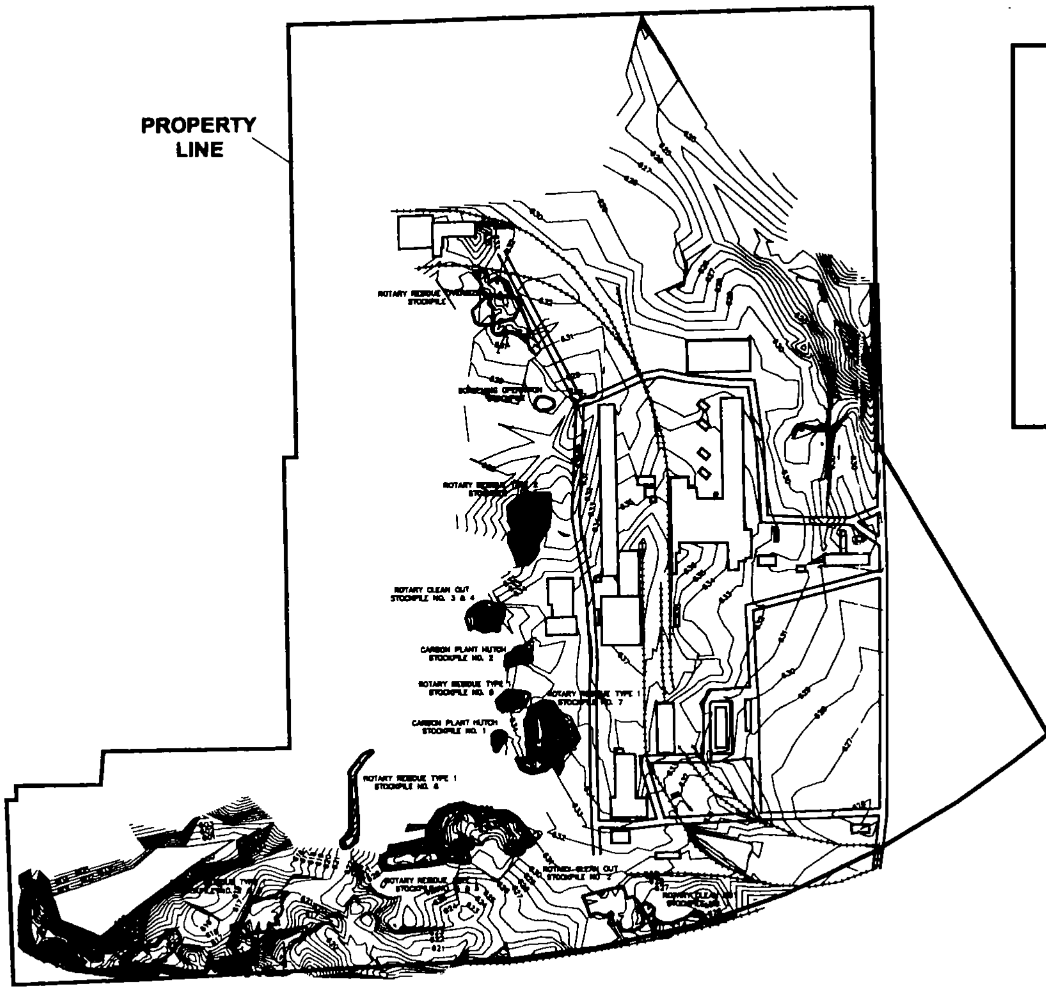
EAGLE ZINC

HILLSBORO, ILLINOIS
December 1999

ENVIRON

02-10-2000

Figure 3



Contours	1998 - Site Survey (by Hurst - Rosche Engineers Inc.)
Stockpile Footprint	December 1999 Stockpile Configuration (Approximate)

EAGLE ZINC

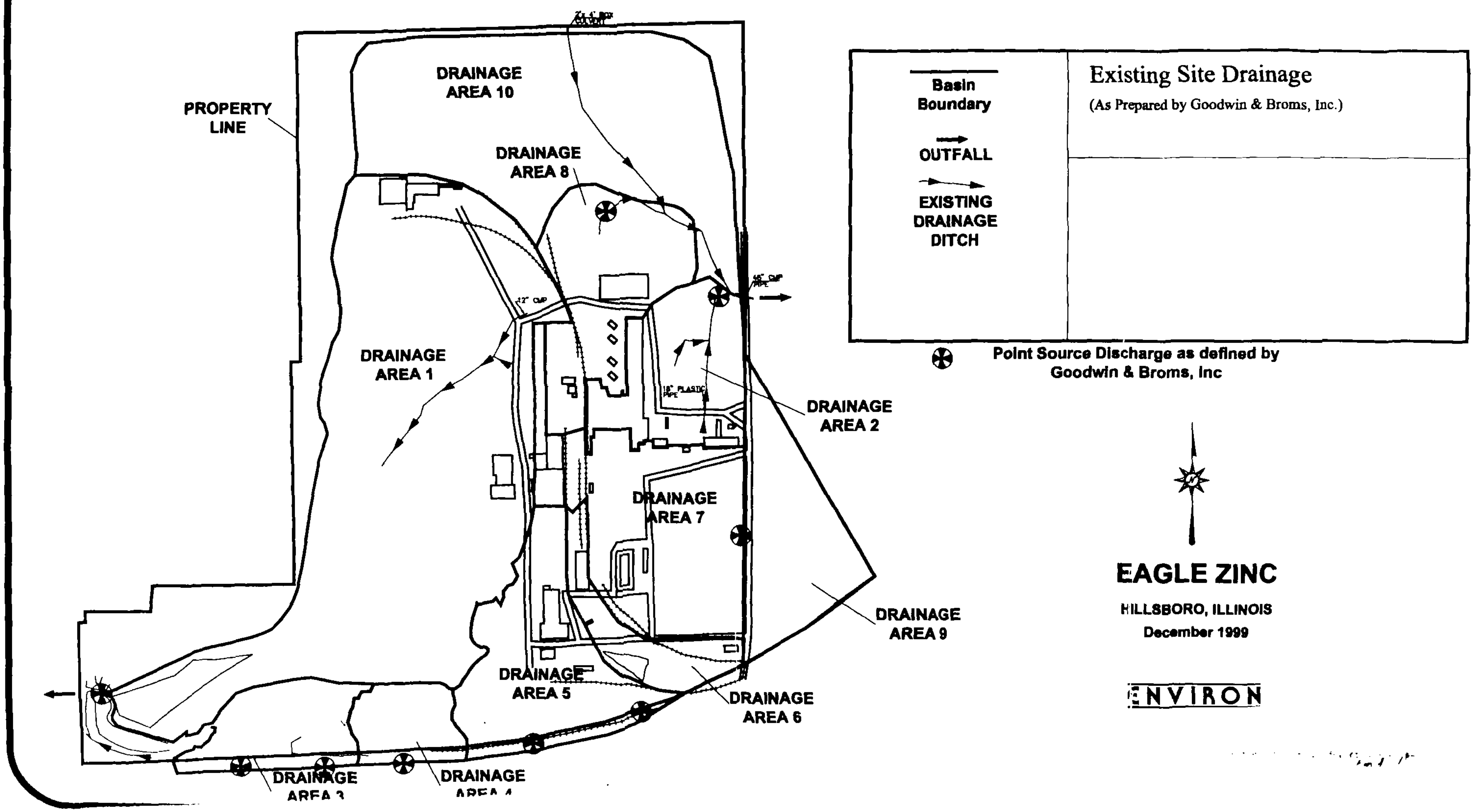
HILLSBORO, ILLINOIS

December 1999

ENVIRON

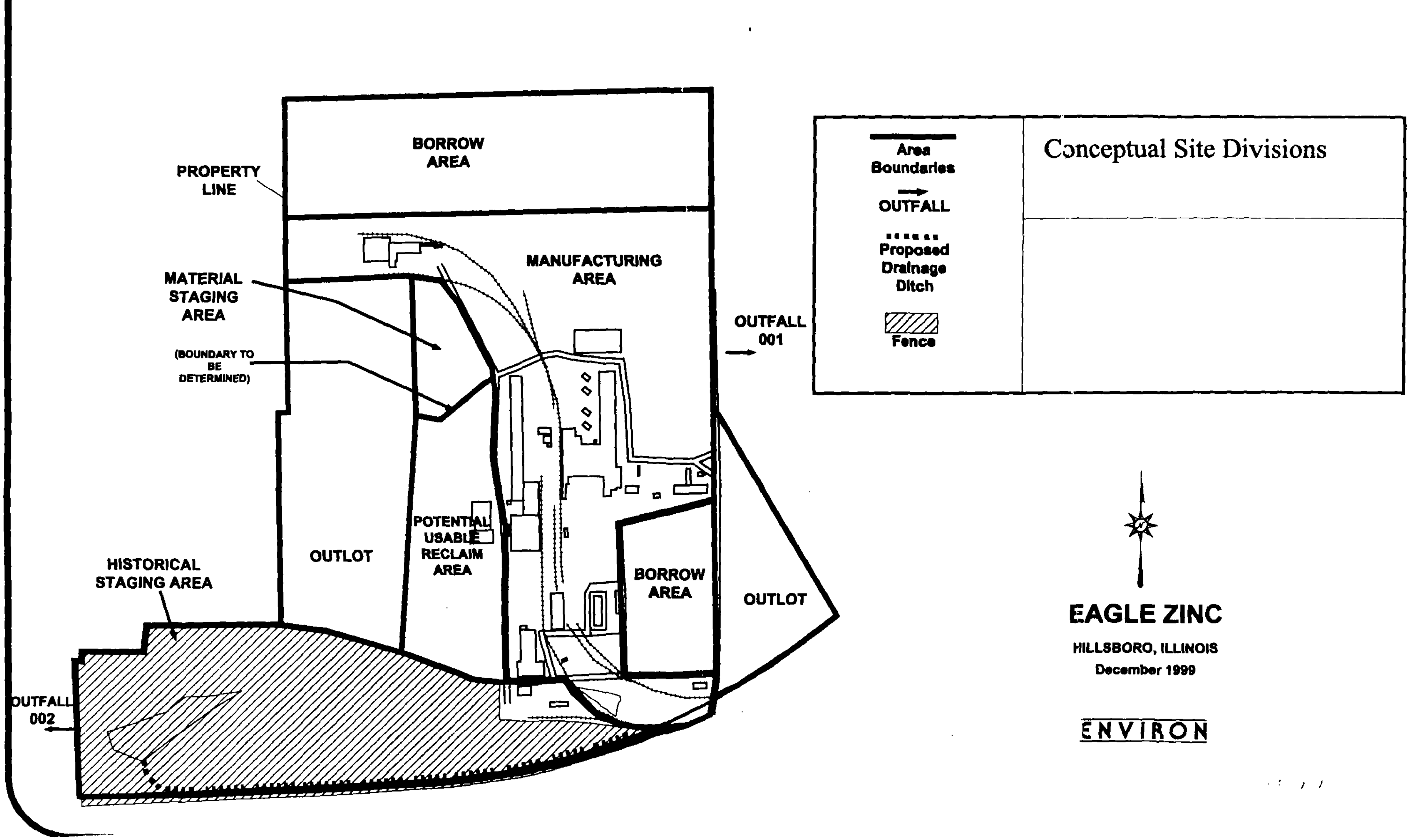
02-10-2000

Figure 4



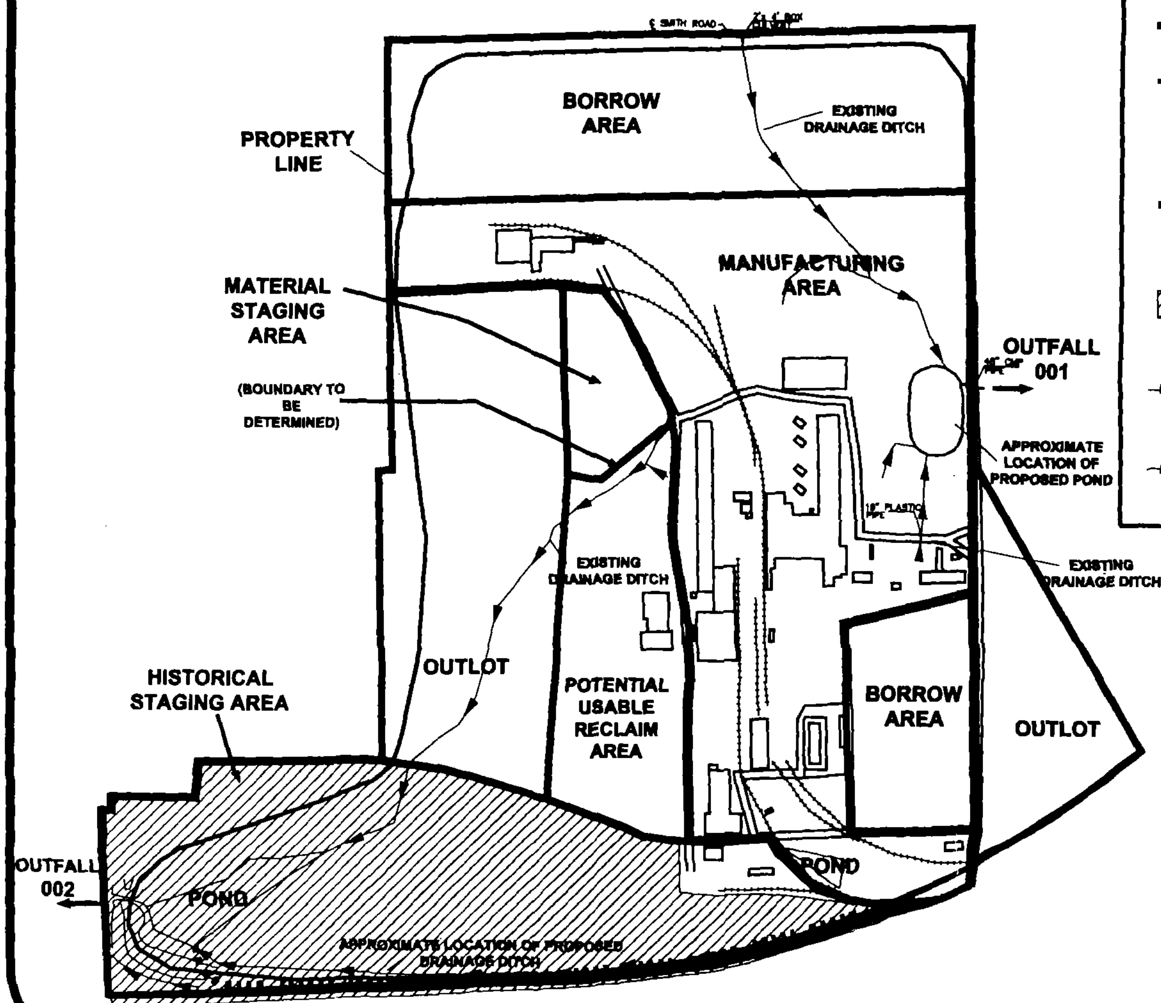
PROPERTY LINE
DRAINAGE AREA 10
DRAINAGE AREA 8
DRAINAGE AREA 1
DRAINAGE AREA 2
DRAINAGE AREA 7
DRAINAGE AREA 9
DRAINAGE AREA 5
DRAINAGE AREA 6
DRAINAGE AREA 3
DRAINAGE AREA 4
12" CMP
18" PLASTIC PIPE
48" CMP PIPE
Basin Boundary
OUTFALL
EXISTING DRAINAGE DITCH
Existing Site Drainage
(As Prepared by Goodwin & Broms, Inc.)
Point Source Discharge as defined by Goodwin & Broms, Inc
EAGLE ZINC
HILLSBORO, ILLINOIS
December 1999
ENVIRON

Figure 5



BORROW AREA
PROPERTY LINE
MANUFACTURING AREA
MATERIAL STAGING AREA
(BOUNDARY TO BE DETERMINED)
OUTFALL 001
OUTLOT
POTENTIAL USABLE RECLAIM AREA
BORROW AREA
OUTLOT
HISTORICAL STAGING AREA
OUTFALL 002
Area Boundaries
OUTFALL
Proposed Drainage Ditch
Fence
Conceptual Site Divisions
EAGLE ZINC
HILLSBORO, ILLINOIS
December 1999
ENVIRON

Figure 6



Legend	
(thick line)	Area Boundaries
(thin line)	Basin Boundary
(arrow)	OUTFALL
(dotted line)	Proposed Drainage Ditch
(hatched box)	Fence
(arrow line)	PROPOSED DRAINAGE DITCH
(arrow line)	EXISTING DRAINAGE DITCH

Conceptual Site Divisions

Proposed Site Drainage Plan

Key Components:

- Cover historical staging area with nominal 2-foot soil cover, vegetate and fence
- Regrading: Storm water runoff from the manufacturing area and borrow area directed to Outfall 001; Storm water from remainder of property directed to Outfall 002.
- Additional paving in manufacturing area
- Demolition of buildings west of railroad siding

EAGLE ZINC

HILLSBORO, ILLINOIS

December 1999

ENVIRON

Figure 7

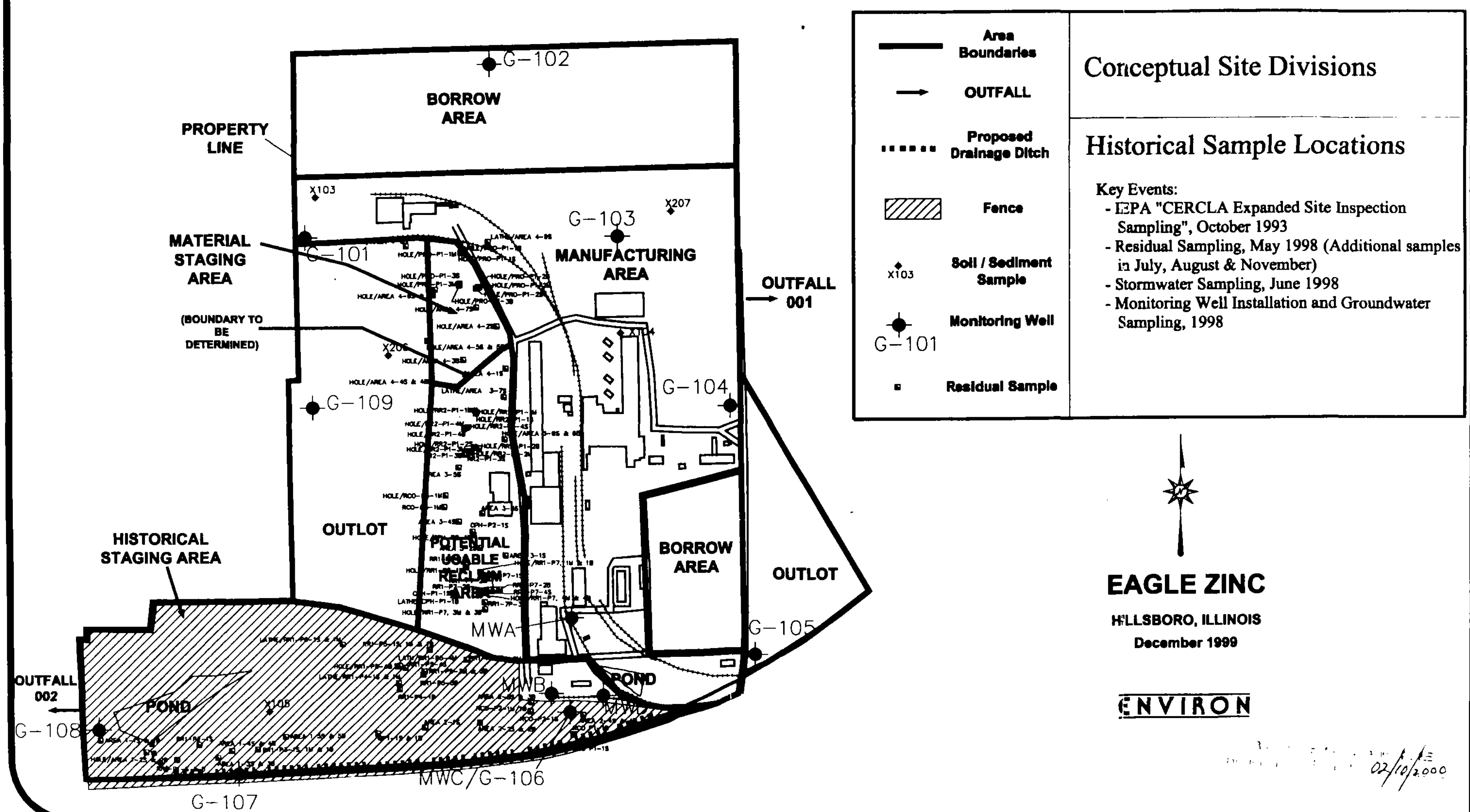
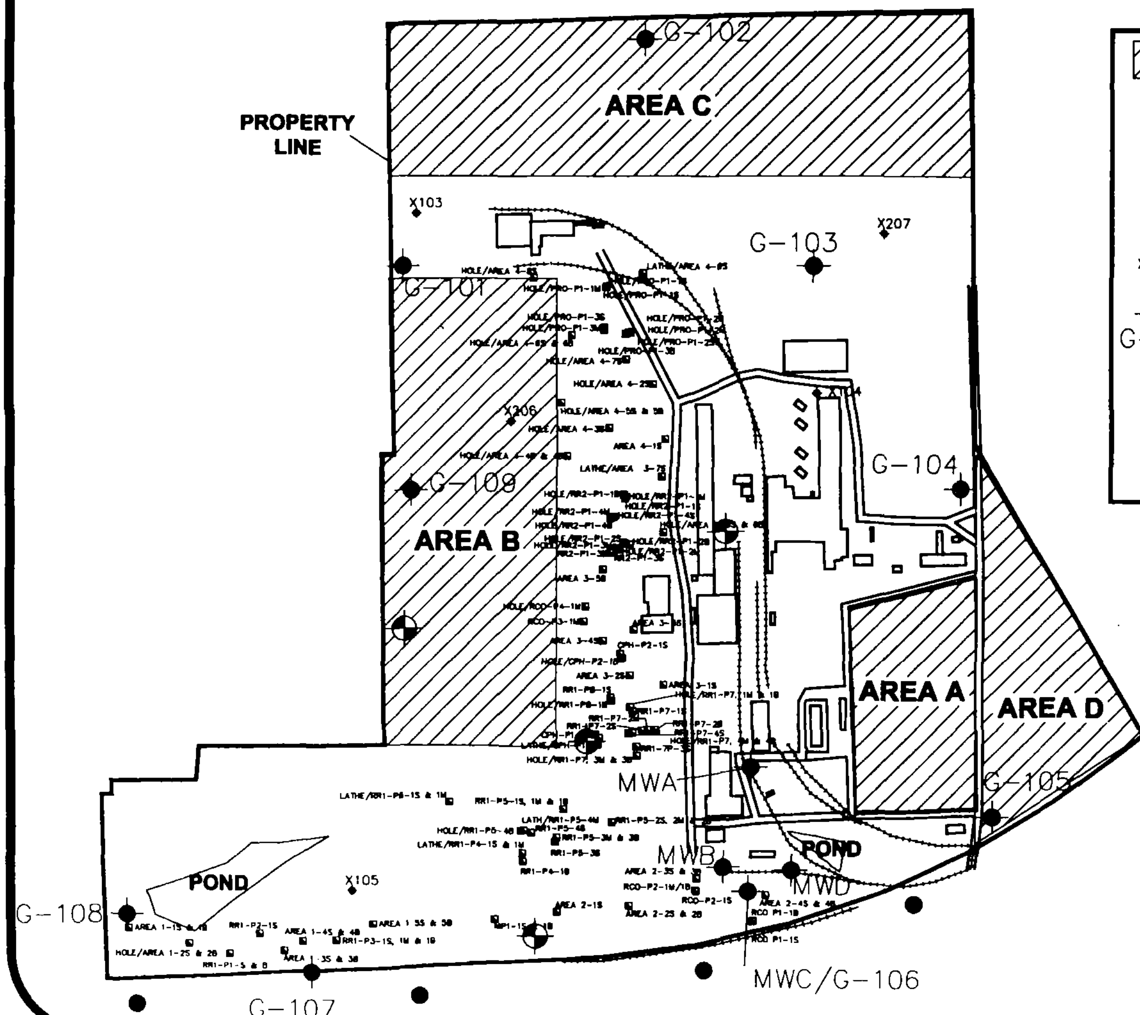

Area Boundaries
OUTFALL
Proposed Drainage Ditch
Fence
Soil / Sediment Sample
X103
Monitoring Well
G-101
Residual Sample
Conceptual Site Divisions
Historical Sample Locations
Key Events:
- EPA "CERCLA Expanded Site Inspection Sampling", October 1993
- Residual Sampling, May 1998 (Additional samples in July, August & November)
- Stormwater Sampling, June 1998
- Monitoring Well Installation and Groundwater Sampling, 1998
G-102
BORROW AREA
PROPERTY LINE
X103
X207
G-103
MATERIAL STAGING AREA
G-101
MANUFACTURING AREA
OUTFALL 001
(BOUNDARY TO BE DETERMINED)
G-104
G-109
OUTLOT
POTENTIAL USABLE RECLAIM AREA
BORROW AREA
OUTLOT
HISTORICAL STAGING AREA
MWA
G-105
OUTFALL 002
MWB
POND
POND
G-108
MWC/G-106
G-107
EAGLE ZINC
HILLSBORO, ILLINOIS
December 1999
ENVIRON
02/10/2000

Figure 8



Soil Area

Approximate location of temporary piezometer

Approximate location of sediment sample

X103 Soil / Sediment Sample

G-101 Monitoring Well

Residual Sample

Proposed EE/CA Investigations

Soil
1. Geoprobe and XRF investigation of Areas A-D.
2. Collect ~4 confirmatory soil samples within each Area. Analyze for metals.

Groundwater
1. Collect round of water level measurements from existing wells.
2. Install 4 temporary piezometers.
3. Collect additional round of water level measurements from wells and piezometers.
4. Sample existing monitoring wells. Analyze for total and dissolved metals.

Sediment
1. Collect 4 off-site sediment samples in southern property line creek. Collect approximately 14 off-site sediment samples along Outfall 001 and Outfall 002 drainageways. Analyze for metals by XRF.

EAGLE ZINC

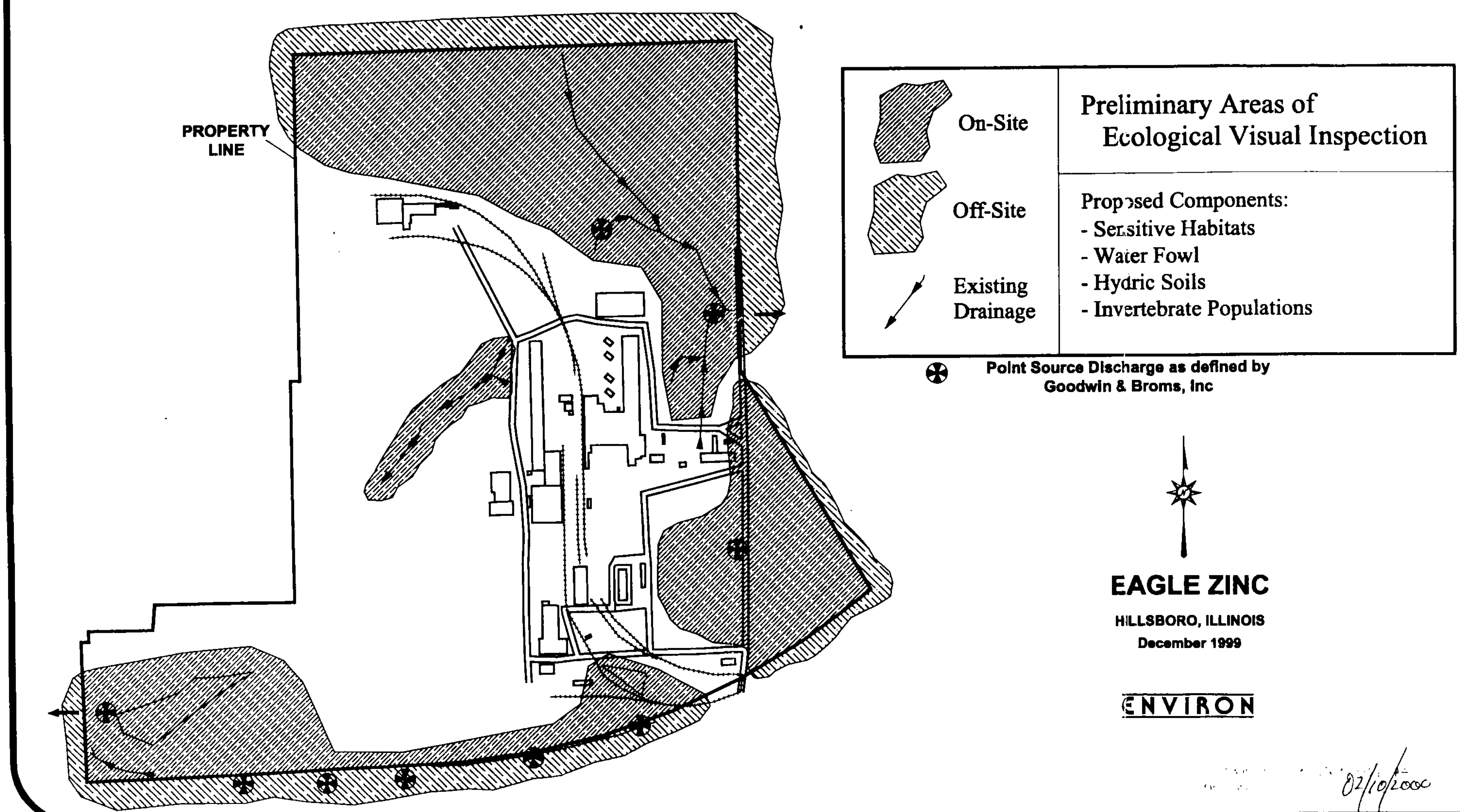
HILLSBORO, ILLINOIS

December 1999

ENVIRON

02/10/2000

Figure 9



PROPERTY LINE
On-Site
Off-Site
Existing Drainage
Preliminary Areas of Ecological Visual Inspection
Proposed Components:
- Sensitive Habitats
- Water Fowl
- Hydric Soils
- Invertebrate Populations
Point Source Discharge as defined by Goodwin & Broms, Inc
EAGLE ZINC
HILLSBORO, ILLINOIS
December 1999
ENVIRON
02/10/2000